

Some References to the Heart, Blood, and Circulation in Rudolf Steiner's Work:

Selective Passages

General Remarks: From *An Occult Physiology (CW 128)*, lec. 4 *Man's Inner Cosmic System*

[There are many objections a person] may make if he has not yet penetrated very deeply into the real nature of spiritual-scientific knowledge. Though readily understood, [these] objections disappear of themselves when one has time and patience to go more deeply into these matters. You will generally find the following to be true: When anyone approaches what is given out through spiritual science with a certain sort of knowledge gathered from all that belongs to present-day science, contradiction after contradiction may result till finally one can get no further. And, if a man is quick to form opinions, he will certainly not be able to reach any other conclusion than that spiritual science is a sort of madness which does not harmonise in the slightest degree with the results obtained by external science. If, however, a man follows these things with patience, he will see that there is no contradiction, not even of the most minute kind, between what comes forth from spiritual science and what may be presented by external science. The difficulty before us is this, that the field of anthroposophical or spiritual science as a whole is so extensive that it is never possible to present more than a part of it. When people approach such parts they may feel discrepancies such as that which we have described; yet it would be impossible to begin in any other way than this with the much needed bringing of the anthroposophical world-conception into the culture and knowledge of our day.

1. 1st Medical Course (CW 312) *Spiritual Science and Medicine*, lec.2

Special difficulties arise, however, if we try to connect the knowledge of man with the needs of medicine today, in our consideration of the heart. What in Osteology and Myology is only a slight defect becomes an evident defect in Cardiology. For, what is the common belief about the nature of the human heart? It is regarded as a kind of Pump, to send the blood into the various organs. There have been intricate mechanical analogies, in explanation of the heart's action — analogies totally at variance with embryology, be it noted! — but no one has begun to doubt the mechanical explanation, or to test it, at least in orthodox scientific circles.

My outline of the subjects for consideration in the next few days will afford piecemeal proof of my general point of view. The most important fact about the heart is that *its activity is not a cause but an effect*. You will understand this if you consider the polarity between all the organic activities centering round nutrition, digestion, absorption into the blood, and so on: follow, passing upwards through the human frame, the process of digestion up to the interaction between the blood that has absorbed the food, and the breathing that receives air. An unbiased observation will show a certain contrast and opposition between the process of respiration and the process of digestion.

Something is seeking for equipoise; it is as though there were an urge towards mutual saturation. Other words, of course, could be chosen for description, but we shall understand each other more and more. There is an interaction in the first place between the liquefied foodstuffs and the air absorbed into the organism by breathing. This process is intricate and worth attention. There is an inter-play of forces, and each force before reaching the point of interplay accumulates in the heart. The heart originates as a “damming up” organ (*Stauorgan*) between the lower activities of the organism, the intake and working up of food, and the upper activities, the lowest of which is the respiratory. A damming up organ is inserted and its action is therefore a product of the interplay between the liquefied foodstuffs and the air absorbed from the outside. All that can be observed in the heart must be looked upon as an effect, not a cause, as a mechanical effect, to begin with. The only hopeful investigations on these lines, so far, have been those of Dr. Karl Schmidt, an Austrian medical man, practising in North Styria, who published a contribution to the *Wiener Medizinische Wochenschrift* (1892, No. 15), “The Heart Action and Curve of the Pulse.” The content of this article is comparatively small, but it proves that his medical practice had enlightened the author on the fact that the heart in no way resembled the ordinary pump but rather must be considered a dam-like organ. Schmidt compares cardiac action to that of the hydraulic ram, set in motion by the currents. This is the kernel of truth in his work. But we need not stop short at the mechanical aspect if we consider the heart action as a result of these symbolic inter-penetrating currents, the watery and the airy. *For what is the heart after all? It is a sense organ, and even if its sensory function is not directly present in the consciousness, if its processes are subconscious, nevertheless it serves to enable the “upper” activities to feel and perceive the “lower.”* As you perceive external colours through your eyes, so do you perceive, dimly and subconsciously through your heart, what goes on in the lower abdomen. The heart is an organ for inner perception.

The polarity in man is only comprehensible if we know that his structure is a dual one and that the upper portion perceives the lower. The following too must be considered: the lower functions — one pole of the whole human being — are considered through the study of nutrition and digestion in the widest sense, up to their interaction with respiration. The interaction goes on in a rhythmic activity; we shall have to consider the significance of our rhythmic system later. But linked up with and belonging to the respiratory activity there is the sensory and nervous activity, which includes all that appertains to external perception and its continuation and its being worked up in the nervous activity. Thus, respiration and sensory and nervous activity form one pole of the human organism. Nutrition, digestion, and metabolism in its usual sense, form the other pole of our organisation. *The heart is primarily that organ whose perceptible motion expresses the equilibrium between the upper and lower processes; in relation to the soul (or perhaps more accurately in the sub-conscious) it is the perceptive organ that mediates between these two poles of the total human organisation.* Anatomy, physiology, biology can all be studied in the light of this principle; and thus light is thrown, and only thus, upon the human organisation. As long as you do not differentiate between these two poles, superior and inferior, and their mediator the heart, you will not be able to understand man, for there is a fundamental difference between the two groups of functional activity in man, according to whether they pertain to the upper or the lower polarity.

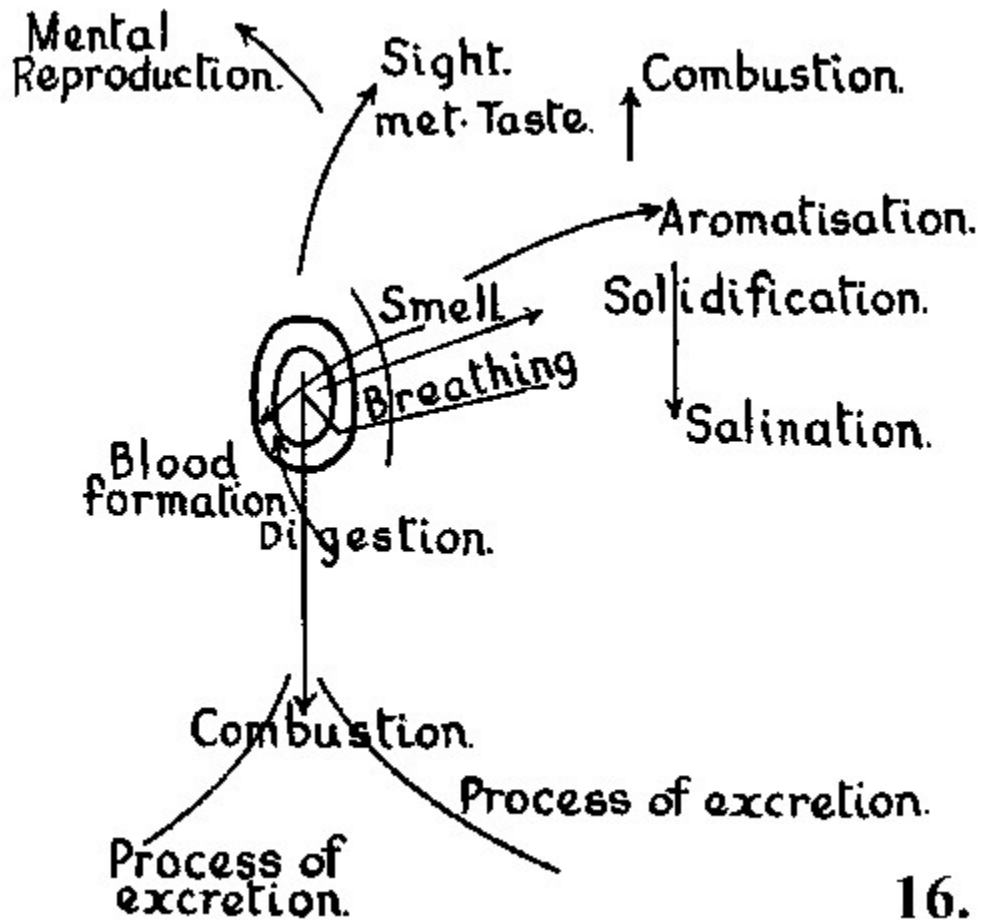
The difference amounts to this: all the processes of the lower sphere have their “negative” so to speak, their negative counter-image in the upper. *The important point, however, is that there is no material connection between these upper and lower spheres, but a correspondence. The correspondence must be correctly apprehended, without search for or insistence on direct material connection.*

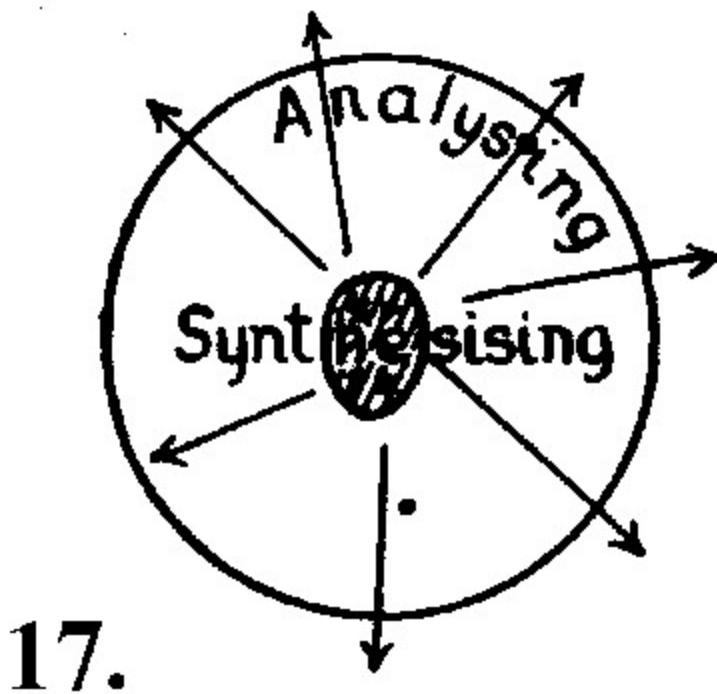
2. 1st Medical Course (CW 312), lec.8

All the organs and functions of our upper sphere in the regions of the smell and taste activities, are interlocked with a life-process, which can be so termed in a deeper sense — i.e. — respiration (See **Diagram 16**). Let us look for the polar complementary activity; it must be something branching from the digestive process, before digestion passes into evacuation, and be the polar counterpart of “representation.” Yet it must be something organically adjacent to the process of digestion, just as respiration is organically adjacent to the process of smell and taste. So we find the converse of respiration in the lymph and blood processes, in the process of blood formation and especially in what branches off and is pushed inward from the digestion, i.e., the processes in the lymphatic glands and similar organs contributing to blood formation. Here then are two polar processes; the one branching from the digestive system, the other from the more external sensory processes; one, respiration, in the second line behind the sensory organs; and the other situated just in front of where the digestive process leads to excretion — the process of blood and lymph. It is remarkable how, starting from actual processes, we come to an insight into the whole human being, whereas in current medicine man is studied only from the organs, considered externally. Here, however, we take our start from the processes and we try to understand the individual person out of the whole relationship between man and the external world. We find interactions that directly depict the etheric activities in man; and these have been our object of study today. *And the two processes of breathing and blood formation meet again in the human heart itself.* The whole outside world (including man) appears as a duality that is dammed up in the heart, and in it strives for a kind of equilibrium.

Thus we come to a remarkable picture, the picture of the human heart, with its interiorising character, its synthesis of everything that works from outside into our bodies. Outside in the world there is an analysis, a scattering, of all that is gathered together in the heart (See **Diagram 17**). You come here to an important conception that might be expressed thus: You look out into the world, face the horizon and ask: — What is in these outer surroundings? What works inwards from the periphery? Where can I find something in myself that is akin to it? If I look into my own heart, I find, as it were, the inverted heaven, the polar opposite. On the one hand you have the periphery, the point extended to infinity, on the other you have the heart, which is the infinite circle concentrated to a point. The whole world is within our heart. To use an illustration, perhaps one that is somewhat crude: — Picture to yourselves man standing looking on into the infinite expanses of the world; perhaps standing on a high hill, looking out and around. And suppose that the tiniest dwarf imaginable is put in the human heart. Try to realise that what the dwarf sees within the heart is the complete inverted image of the universe, contracted and synthesised. This is perhaps purely a picture, a kind of imagination. But if righty

conceived and taken up, it can work as an orderly regulative picture, a regulative principle, that is able to guide us, and to help us rightly to combine our isolated attainments of knowledge.





3. 1st Medical course (CW 312), lec.9

But we have also organs that open in a way our human organism from within; and thus bring man into relationship with what happens at a certain nearness to our earth's surface; that is to say, into relationship with the meteorological world, in its widest meaning. And if we do not limit our healing efforts to mere substances with curative properties, but extend them to tracing the curative processes, we must include within our purview the relationships of man to the meteorological processes — again in the widest sense of the term.

We are already able to distinguish what is associated mainly with the astronomical world from what is associated mainly with the meteorological world, in our organism. This distinction, to be sure, needs a more delicate method of observation. At first, no doubt, these statements may shock your preconceptions, but I hope to convince you in time that the classification above mentioned is the best of foundations for curative treatment. As a general rule we find that the organs which open to the meteorological sphere are those farthest from the surface and most deeply internal. The chief amongst them is the *liver*, and all the vesicular structures, especially represented by the *bladder* itself, the bladder being extremely important pathologically, even one of the most important of our attributes for pathological purposes. Another member of this group is the *lung*: which opens externally in order to mediate breathing. Then again, we must include the *heart* in this group, and if you have correctly interpreted much that has been said in our previous lectures, you will easily understand this fact. And

indeed all these organs are associated with by going thoroughly into the problems of the human relationship to the world without, and especially into the connection of the human activities with the world environment.

I would urgently suggest that you make a thorough effort to trace back all the cases of cardiac lesions brought to your consulting rooms, to disturbance of human activity. Definite investigations should be made into the differences — and they are considerable — between the *heart action* of — for instance a peasant, who cultivates his bit of land, and has very few occasions for getting away from it, and the heart action of persons whose profession implies a good deal of motoring or at least a good deal of railway travel. It would be of utmost interest to obtain adequate comparative data on this topic. For you will find the tendency to cardiac complaints mainly dependent on the sedentary immobility of the person who, while thus sitting still, is carried forward by forces outside himself, whether in a railway carriage or a motorcar. This passive abandonment to motion is the cause which as it were deforms all processes dammed up in the heart.

All this acting and reacting between man and the external world, is dependent on the manner in which he develops warmth. Here you see the relationship of the heart's activity with the impulse of warmth in the world belong to man; and you conclude that if enough warmth is generated by man through his own activity, the sufficient amount of warmth developed in the process of life, is itself the measure of the soundness of the human heart. Therefore it is important for the treatment of cardiac cases, to provoke spontaneous movements that are fully permeated with life and soul. I am convinced that after perhaps no more than fifteen years have gone by, people will think more clearly and justly in these matters, than they do today. They will say — “It is certainly curious that cardiac cases have acquired sound heart action through the practice of Eurhythm!” [Ed: Eurythmy is a new art of movement created by Dr. Steiner. See *Eurythmy as Visible Song: Eurythmy as Visible Speech*. Rudolf Steiner Publishing Co.] — for Eurythmic practice mainly regulates the spontaneous movements permeated with soul and even according to law. So it is perhaps permissible to mention these truly remedial exercises derived from Eurhythm (curative Eurythmy), in the treatment of all irregularities of the cardiac functions.

4. 1st Medical Course (CW 312), lec.12

You are aware that vegetable, animal and human organisms are alike based on *proteins*, on *albuminous* substances. You know that, in the terms of contemporary chemistry, the main ingredients of albumen are the four main natural substances, carbon, oxygen, nitrogen, hydrogen, and, in addition, sulphur, as, so to speak, a homeopathic agent in the operations of the other four.

It is necessary to form an idea of how the internal function of albumen is brought about; how is protein made? Contemporary chemical science must obviously and conformably to its premises reply: — Oh well, any such substance has the configuration proper to its inherent forces. It follows that one identifies things which are actually not at all the same, or that are not similar as much as is assumed. Sometimes a certain dissimilarity is recorded, and in any case the identity is invalid. In consequence of the application of atomistic theory to the structure of albumens, vegetable albumen and animal

albumen have been viewed as very much alike, and up to a certain degree at least chemically identical. But that is absolutely not the case. A closer and more exact study of our human organism recognises the fact that vegetable albumen neutralises animal and more especially human albumen; that the two are in fact polar opposites, and that each annihilates in an intimate way the effects of the other. It is strange indeed that we must admit: *animal albumen is of such a nature in its functions that these functions are impaired, abolished partially or even wholly abolished, by those of vegetable albumen*. And this leads us to the question: Well, what is the exact difference between what appears as albumen in the animal organism or especially in that of man, and what appears as the same substance in the organism of plants? It is in your recollection that I have had frequently to mention the important part played in relation to all extra-telluric meteorological processes by the four organic systems, *bladder, kidneys, liver, lungs, and their complement, the heart*. Those four organic groups are most important in determining how man is affected by the meteorological happenings in the external world. Now: What is the significance and office of these four systems.

These four organic systems are nothing less than the creators of the structure of human albumen. So we must study them, and not the atomistic and molecular forces in the albumen substance. In our inquiry "Why is albumen what it is?" we must conceive of its internal structure as the resultant of forces emanating from these four organic systems. Albumen can be called the product of this fourfold co-operation. With this we state a remarkable fact in respect of the interiorisation of external forces within man. What contemporary chemistry looks for in the actual structure of the substance in question, we look for and find in the organic systems of the human body. Therefore the characteristic structure of human albumen cannot conceivably exist in the external terrestrial sphere; it cannot remain unless it is under the influence of these four organic systems. In other conditions it is bound to change its structure.

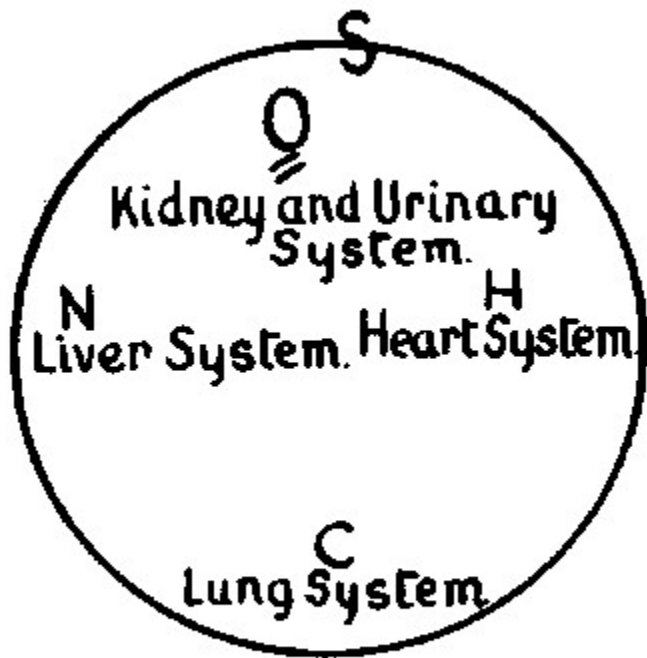
But it is otherwise with *vegetable albumen*. Vegetable albumen is, so it seems, not controlled by any analogous group of organs, but it is under another influence; namely, of the four elements, *oxygen, nitrogen, hydrogen, carbon*, and also under that of the meteorologically omnipresent mediator between these four main elements, namely *sulphur*. In vegetable albumen, these four elements dispersing themselves throughout the atmosphere, perform the same office as the lungs, heart, liver and so forth, within man. External nature contains in these four substances the same formative forces as are individualised in the human organism through the four main groups. It is important to remember that in speaking of oxygen, hydrogen and so forth, we should not limit their meaning to the inherent forces and attributes recognised by modern chemistry, but that we should conceive these elements as possessing formative forces, with activities which affect one another mutually, and by which they contribute to the furnishing of the earth sphere. If we consider them separately and in detail, we must identify the external operation of *oxygen* with the internal operation of the *kidney and urinary system*. What is done in the outer world, by the formative forces of *carbon*, we must identify internally with the *pulmonary system*: not regarding the lungs however as organs of respiration, but as possessing particular formative forces. We must identify *nitrogen* with the *liver system*, *hydrogen* with the *cardiac system* (see [Diagram 22](#)). Hydrogen is indeed the heart of the outer world; and nitrogen the liver of the external world, etc.

It would be well, my friends, for humanity today, not only to let itself be persuaded to recognise these things, but to work them out for itself. For example, in recognising the association of the heart

system with the formative forces of hydrogen, you will readily admit the essential importance of hydrogen circulation for the whole upper bodily sphere in man. For with the metamorphosis of hydrogen towards the upper bodily sphere, the lower and more animal region is changed into the specifically human, tending towards the developing of concepts, etc. And I have already indicated that there we shall have to deal with an extra-telluric influence to be identified with the metal *lead*. You will remember that lead, tin and iron have already been classified as forces possessing special affinities with the upper sphere in man. At the present time there is no great inclination to admit these interrelationships Nor will there be, as yet, much wish to go outwards from man into the external world, recognising the specific working of lead, as something associated with the fact that hydrogen is made ready by the heart, and then serves as carrier for the preparation of the apparatus of thought. Nevertheless the unconscious progress of human evolution is compelling mankind to recognise this fact. For today it is no longer possible to deny that lead plays some role in the external world, even if only from the functional standpoint; as lead has been actually found among the products of transmutation which Röntgenology has discovered; lead has been actually found as a final product formed by way of helium, not with the usual atomic weight, as a matter of fact; but still it has been identified as lead. Furthermore, as lead has been discovered, so shall we also find tin, and iron as well, iron that as the only constituent of external nature, impinges directly upon our human constitution. Surely today we need to give heed not only to the science of Röntgen rays, however wonderful as a guide and finger-post to the cosmos external to ourselves, because it speaks not only of the crude metallic ores within the earth, but of the metal forces playing upon us from the extra-telluric sphere. That must be said nowadays. For the emergence of new types of disease shows the necessity of taking these factors into account.

What interests us here is the fact that the function performed in the external world by carbon, hydrogen, oxygen, nitrogen, and their mediator sulphur, is being individualised in man through the four organic systems. Correct estimation of this fact will lead you deep into the core of man. Then you will no longer find it strange to bring the involuntary elements in our nature — i.e., those which seem to be under the control of the spiritual functions — into association with the whole extra-human world. For on the other hand, observe this truth also. Man is so constructed as to have, for instance a certain system of organs which we know as the kidneys. But each of the four systems has an urge to become the whole man: the kidneys have an urgent tendency to become the whole man; the heart has the same tendency, so has the liver, so have the lungs. In order to convince oneself of such facts, it is helpful to turn one's eyes — or rather one's sensitivity — to observe certain workings of extra-human realities in one's being. It is hardly possible to avoid drawing your attention to the borderline where Natural Science passes over Spiritual Science. For, indeed, if you continue your practice both in medicine and in meditation, and learn to put yourself more and more in tune with the life of meditation, feeling yourself as a meditating human being, you will gradually arrive at a concrete and real self-knowledge. Such a self-knowledge is not to be despised if it comes to such positive tasks as the cure of disease! If you attain further progress in meditation you will become aware of things in your own bodies which were originally quite beyond consciousness. You have only to become conscious of this new awareness, in order to learn what it is as yet difficult to mention and describe in public lectures or even before lay audiences, because of the tendency which then arises. I shall presently refer to one of these elements, elementary as it is. But if these matters were to be broadcast indiscriminately in wider circles today, among mankind in its present moral condition, there would at once arise the query: "Well, why are these powers not

utilised?” Followed by the conclusion: “Yes, I should have to practise meditation — and I can get the same result more easily by simply incorporating this or that substance.” It is more convenient to diet or inject, than to practise meditation. By taking that course, mankind decides in a **certain sense on moral ruin**. But with their contemporary moral constitution, people would not hesitate — you will see the core of my argument presently — to reject meditation in favour of some external remedy, which would, we must admit, help them, on the first steps of the road, to results similar to the fruits of meditation.



22.

5. 2nd Medical Course (CW 313) Anthroposophical Spiritual Science and Medical Therapy, lec.5

It is remarkable that the human ego, studied in its spiritual, psychical, organic, and mineral activities, is a kind of vehicle, you could say, for phosphorus. The ego creates the phosphorus-vehicle in such a way that with this vehicle it extends to the periphery of the organic human being. The phosphorization of the human organism is an activity of the ego. Through the ego, this phosphorus distribution is extended to the outermost borders, to the very periphery of the organic human being, in a most ingenious way. To a certain limit — which must not be exceeded, however — the ego can only carry phosphorus through the organism by first combining it chemically to other substances. The ego in essence hinders the chemical liberation of phosphorus by carrying it through the organism. This is one of the ego's tasks, to hinder the chemical liberation of phosphorus, of all but the traces of phosphorus required by a certain special process. This process would occur on a large scale if the ego did not succeed in preventing the liberation of the phosphorus taken in.

If the phosphorus were to be set free, inducing an intensive effect in the human organism, there would be definite consequences. I have told you in the course of these lectures that when the human being enters the world, that is, when his pre-existing soul-spiritual aspect comes into corporeality, the imprints of the etheric body, astral body, and ego are first created. I also said to you that everything constituting the imprint of the ego is actually to be found in dynamic systems, the systems of movement that are brought to an equilibrium. This is something to which we must pay special attention at this point in our considerations.

The ego requires phosphorus to bring about equilibrium between unbalanced states or those in which the balance has been disrupted. When I take a step forward, my equilibrium is disturbed and I must restore it again, but through the help of inner processes. This task in the human organism is accomplished essentially with the help of phosphorus. When the ego does not exhaust its phosphorizing activity in making static what is dynamic within the human being, it brings phosphorus to the imprint of the ego already present, to this process of making static what is dynamic. I have frequently drawn your attention to the fact that in addition to our solid constituents we must also consider the fluid man, the aeriform man, and the warmth man. Picture to yourselves the fluid man, that which is expressed in the imprinting of the ego, of the astral body, and then the ego itself, in the etheric body. This means that in the etheric body something dynamic, something not in a state of equilibrium, must continually be brought into equilibrium.

What we are speaking about here has to do with extraordinarily delicate effects. And these delicate effects are regulated by the presence in the human body of free-floating globules that are nevertheless connected with the whole movement of the organism, including the inner movement. These are the blood corpuscles. Against these blood corpuscles must beat the activity of the ego within the body's mobility — including, for example, the mobility of warmth. These blood corpuscles are not really little globules but are essentially constituted so that even their form shows that they are intended to guide movement over into equilibrium. What the ego does in working into the capacity for movement of the human organism reaches its limit at the blood corpuscles. Here it has to stop, and that most intimate interaction between the human ego and the whole human organism must occur. Here too occurs what I might call the most hidden battle between the continual phosphorizing process in the human being and the formative process of the blood. Thus, if phosphorus is brought into the human being in the free state, the blood corpuscles are destroyed by the phosphorizing process.

This is something that can lead us pictorially to this remarkable reciprocal action of the ego, which is a spiritual entity. Indeed, the ego is spiritual through and through, but it continually interacts with the physical through the blood corpuscles. In this respect, “blood is a very special fluid,” as an old saying — not Goethe — tells us. For in the blood the outer physical part of the human being interacts with his most spiritual member, the first that he carries with him, the ego. It is in the blood that the most injurious processes can arise when the ego enters into this interaction improperly. A great deal in the physical body can be ruined by such an incorrect interaction: destruction of the epithelium, fatty degeneration extending to the muscle fibers — especially the striated muscle fibers, for the ego acts especially on these — disintegration of the blood corpuscles, and so on. Indeed, this corporeal process of degeneration can extend into the bones if the phosphoric effects are not in order.

This interplay between the ego (which, of course draws the astral body with it) and the physical body (which then draws the etheric body with it), shows us clearly that there is a constant striving toward a normal and an abnormal state. The normalizing tendency attains a certain culmination and is then followed by a decline. We see this manifested when we have to do with a case of poisoning by phosphorus, for instance. In phosphorus poisoning, you will find that in the first place the astral body and the etheric body resist what is occurring in the physical body and the ego. They resist, they defend themselves with all the force, with the strongest force, of the etheric body. The etheric body tries to stand up to the over-activity of the ego; it tries to counter this by strengthening its own forces. Therefore there is an inner similarity between the process of the first stage of poisoning by phosphorus and another process, namely, the occurrence of the review of life after death. As you know, this can last for a day and a half, or for two to three days. During this review the etheric body is held within the astral body. In a sense, they cling together. This also happens in the human body when phosphorus poisoning occurs. Everything that can develop through the cooperation of the astral and etheric bodies, which takes place during this review after death by means of the etheric body, is developed now. Hence through these forces that are expended in the first stage of phosphorus poisoning, an improvement will set in after a lapse of as long a time as such a review would last. There will be a kind of fatiguing or recession, and then after this recession the abnormal influence of the ego will set in with even greater intensity. An actual case of phosphorus poisoning is extraordinarily difficult to treat, because it can only be combatted by trying to find a way of inducing in the whole organism an intense cooperation of the astral with the etheric. This could be achieved by opposing the phosphorus poison with a strong application of drawing plasters applied to various parts of the body. You would certainly achieve results in this way. Of course something must be known about these things, and one has to have a feeling for how far to go.

Thus the physical organism, when the ego intervenes in it, can be intensely engaged by being involved in what we may call "phosphorization" of the human being. However, when the ego intervenes strongly in the physical organism, — that is, in a destructive way — the polar opposite must necessarily occur: what the ego normally does in the human organism, when it does not intervene too strongly, must suffer. Hence you will find a phosphorization that is too powerful accompanied by states of insomnia, due simply to an excessive proclivity of the astral body and ego to the physical. You could deduce this from everything I have said. You will find headaches and all the conditions usually accompanying paralysis. These conditions naturally arise in connection with what I have said about the interaction with the blood. What lies in the middle, and what therefore appears with phosphorization (when the ego attacks the blood corpuscles and is repelled again in the alternating process described) comes to expression in conditions of jaundice. In fact, in jaundice we can also observe an interplay of the psychological and the physical.

6. 2nd Medical Course (CW 313), lec. 6

Nutrition takes place primarily through an activity that impresses itself on the fluid-etheric and on the solid-physical. Therefore nutritive and digestive activities occur primarily in the ethericfluid and the physical-solid, whereas the main respiratory activity is developed in the astral-airy, and the main ego activity, the actual spiritual activity, unfolds in the warmth conditions connected with the ego itself. Spiritual activity within the physical organism is a cooperation of the ego with warmth conditions, i.e., with all those organizations where warmth can work into the physical. The ego must always go hand in hand with warmth, must always operate through warmth. If we put a patient to bed and tuck him in, this is simply an appeal to the ego to make use of the warmth generated in an appropriate way.

These considerations provide insight into human nutrition in general. Nutrition is an interaction between tissue fluids — i.e., the watery constituent in which nutrition and elimination chiefly take place — and the protein organism of the human being. The latter is, relatively speaking, extraordinarily stable; it is labile in a certain respect only during the period of growth, then becomes stable and undergoes a kind of disintegration during the second half of life. In the tissue fluid there is a continual assimilation and disintegration of the protein in food. It is in this activity that attacks are made on that which wants to remain stable in protein formation: the human being's inner proteinaceous organs generally; they want to remain stable. This is because they wish to liberate soul-spiritual activity inwardly, to isolate it within. What is achieved through the process of nutrition is this continual interaction between the extraordinarily mobile play of forces, constituted by this active assimilation and disintegration of protein, and the play of forces striving towards rest that arise in this interplay of the inner protein in the human being. Hence it is partly a superstition, partly correct, to say that the human being builds up his body through the substances he absorbs from his food. It is a superstition because the constructive forces are already present in his proteinaceous body simply by virtue of the fact that a human being is a human being; on the other hand, the human being unfolds an activity from the other pole, which conducts a continual attack on this stability of his own proteinaceous formation.

We may say then that it is incorrect to believe that human life is maintained only by the consumption of food. This is simply not correct. It would be just as correct to say that life is maintained by the active interplay of forces in the tissue fluids. When you give food which stimulates this activity in the tissue fluids, you maintain life. This does not happen by merely introducing food substances into the body but by the encounter with the stable forces of its own proteinaceous constituents. This is a process that you stimulate by absorbing food, and this process is the most fundamental factor in the maintenance of life. Here, too, we find that we have to look at the process. It can be, for example, that substances we know to be effective in children do not necessarily act in the same way in an adult; for a child is developing his body and needs the introduction of substances and the unfolding of their forces in an inward direction. If you know that something is effective as substance in a child, it will not be similarly effective in the adult. In an adult, it may be much more necessary simply to maintain and stimulate the forces in his tissue fluids that are striving toward rest.

If you now study everything that takes place in the human organs with a backward orientation, as it were (the head is also such an organ), everything taking place in the lungs and liver, and then turn your

attention to those more embedded in this activity of the tissue fluids, you will find the heart enclosed by the lungs as the archetypal organ. The human heart is entirely formed out of the activity of tissue fluid, and its activity is no more than the reflection of this inner activity.

The heart is not a pump! I have often said this; it is rather an apparatus for sensing or registering the activity in the tissue fluid. The heart is moved by the circulation of the blood; it is not the pumping action of the heart that moves the blood. The heart has no more to do with human circulation than a thermometer does with the production of outer heat or cold. Just as the thermometer is nothing more than an instrument for registering the degree of heat or cold, so your heart is nothing more than an apparatus for registering what takes place in the circulation and what flows into this from the metabolic system. This is a golden rule that we must heed if we wish to understand the human being. In the belief, that the heart is a pump driving the blood through the blood vessels, we can see how modern natural science reverses the truth. Anyone believing in this superstition about the heart ought to be consistent and believe that it is warmer in his room because the thermometer has risen! This is the consistent conclusion of such an approach.

You can see to what results one is led by views that simply do not take into account what is by far the most significant aspects of man's being: the soul and spirit. Such views ignore the mobile, the dynamic aspects and proceed from what is merely material, trying to draw from the substance itself those forces that are only imprinted on the substance. Such views want to attribute to the heart the forces that are only imprinted upon it by the dynamics, by the play of forces in the human body.

In the heart activity and in the heart organ we really have the most advanced organization of what is placed over against respiration and the liberation of the spirit in man. This may now be called a polar metamorphosis, in contrast to a mere transformation. In the head, lung, and liver, you have various stages of metamorphic transformations. But as soon as you study the heart in relation to the lungs, you have to speak about a polar metamorphosis, for the heart in its formation is the polar opposite of the lung.

7. Cosmic Memory (CW 11), Chap. 18, The Fourfold Man of Earth

One can see that, to the eye of the scientist of the spirit, the physical body is not something fixed, something permanent in its form and manner of acting. It is undergoing a constant process of transformation. And such a transformation is also taking place in the current earth period of the body's development. One can only understand human life if one is in a position to form a conception of this transformation.

A consideration of the human organs from the point of view of the science of the spirit shows that these are at very different stages of development. There are organs in the human body which, in their present form, are in a descending, others which are in an ascending development. In future, the former will lose their importance for man more and more. The time of the flowering of their functions is behind them; they will become atrophied and finally disappear from the human body.

Other organs are in an ascending development; they contain much which now is only present in a germinal state, as it were: in future they will develop into more perfect forms with a higher function. Among the former organs belong, for instance, those which serve for reproduction, for the bringing into existence of like beings. In future their function will pass to other organs and they themselves will sink into insignificance. There will come a time when they will be present on the human body in an atrophied condition, and one will then have to regard them only as evidences of the preceding development of man.

Other organs, as for instance the heart and neighboring formations, are at the beginning of their development in a certain respect. What now lies in them in a germinal state will reach its full flower only in the future. For in the conception of the science of the spirit, the heart and its relation to the so-called circulation of the blood are seen as something quite different from what contemporary physiology, which in this respect is completely dependent on mechanistic-materialistic concepts, sees in them. In so doing, this science of the spirit succeeds in casting light on facts which are well-known to contemporary science, but for which with the means at its disposal, the latter cannot give anything like a satisfactory explanation. Anatomy shows that in their structure the muscles of the human body are of two kinds. There are those whose smallest parts are smooth bands, and those whose smallest parts show a regular transverse striation. Now the smooth muscles in general are those which in their movements are independent of human volition. For instance, the smooth muscles of the intestine push the food pulp along in regular movements, upon which the human volition has no influence. Those muscles which are found in the iris of the eye are also smooth. These muscles bring about the movements through which the pupil of the eye is enlarged when the latter is exposed to a small amount of light, and contracted when much light flows into the eye. These movements too are independent of human volition. On the other hand, those muscles are striated which mediate movements under the influence of human volition, for example, the muscles by which the arms and legs are moved. The heart, which after all is also a muscle, constitutes an exception to this general condition. In the present period of human development, the heart is not subject to volition in its movements, yet it is a "transversely striated" muscle. The science of the spirit indicates the reason for this. The heart will not always remain as it is now. In the future it will have a quite different form and a changed function. It is on the way to becoming a voluntary muscle. In the future it will execute movements which will be the effects of the inner soul impulses of man. It already shows what significance it will have in the future, when the movements of the heart will be as much an expression of the human will as the lifting of the hand or the advancing of the foot are today.

This conception of the heart is connected with a comprehensive insight of the science of the spirit into the relation of the heart to the so-called circulation of the blood. The mechanical-materialistic doctrine of life sees in the heart a kind of pumping mechanism which drives the blood through the body in a regular manner. Here the heart is the cause of the movement of the blood. The insight of the science of the spirit shows something quite different. For this insight, the pulsing of the blood, its whole inner mobility, are the expression and the effect of the processes of the soul. The soul is the cause of the behavior of the blood. Turning pale through feelings of fear, blushing under the influence of sensations of shame, are coarse effects of processes of the soul in the blood. But everything which takes place in the blood is only the expression of what takes place in the life of the soul. However, the connection

between the pulsation of the blood and the impulses of the soul is a deeply mysterious one. The movements of the heart are not the cause, but the consequence of the pulsation of the blood.

In the future, through voluntary movements, the heart will carry what takes place in the human soul into the external world.

Other organs which are in a similarly ascending development are the organs of respiration in their function as instruments of speech. At present by their means man can transform his thoughts into air waves. He thereby impresses upon the external world what he experiences within himself.

He transforms his inner experiences into air waves. This wave motion of the air is a rendering of what takes place within him. In the future he will in this way give external form to more and more of his inner being. The final result in this direction will be that through his speech organs which have arrived at the height of their perfection, he will produce his own kind. Thus the speech organs at present contain within themselves the future organs of reproduction in a germinal state. The fact that mutation (change of voice) occurs in the male individual at the time of puberty is a consequence of the mysterious connection between the instruments of speech and reproduction.

The entire human physical body can be considered in this way from the point of view of the science of the Spirit. It was only intended to give a few examples here. In the science of the spirit, both an anatomy and a physiology exist. The anatomy and physiology of the present will have to let themselves be fertilized by the anatomy and physiology of the science of the spirit in a not very distant future, and will even transform themselves completely into the latter.

In this area it becomes especially apparent that results such as those given above must not be built on mere inferences, on speculations such as conclusions by analogy, but must only proceed from the true research of the science of the spirit. This must necessarily be emphasized, for it happens only too easily that once they have gained some insights, zealous adherents of the science of the spirit continue to spin their ideas in empty air. It is no miracle when only phantasms are produced in this way, and, in fact, they do abound in these areas of research.

One could, for instance, proceed to draw the following conclusion from the description given above: Because the human organs of reproduction in their present form will in the future be the first to lose their importance, they therefore were the first to receive it in the past, hence they are in a sense the oldest organs of the human body. Just the contrast of this is true. They were the last to receive their present form and will be the first to lose it again.

The following presents itself to spiritual scientific research. On the Sun, the physical human body had in a certain respect moved up to the level of plant existence. At that time it was permeated only by an ether body. On the Moon it took on the character of the animal body, because it was permeated by the astral body. But not all organs participated in this transformation into the animal character. A number of parts remained on the plant level. On the earth, after the integration of the "I," when the human body elevated itself to its present form, a number of parts still bore a decided plant character. But one must

not imagine that these organs looked exactly like our present-day plants. The organs of reproduction belong among these organs. They still exhibited a plant character at the beginning of the earth development. This was known to the wisdom of the old Mysteries. The older art which has retained so much of the traditions of the Mysteries, represents hermaphrodites with plant-leaf like organs of reproduction. These are precursors of man which still had the old kind of reproductive organs (which were double-sexed). For example, this can be seen clearly in a hermaphrodite figure in the Capitoline Collection in Rome. When one looks into these matters one will also understand for instance the true reason for the presence of the fig leaf on Eve. One will accept true explanations for many old representations, while contemporary interpretations are, after all, only the result of a thinking which is not carried to its conclusion. We shall only remark in passing that the hermaphrodite figure mentioned above shows still other plant appendages. When it was made, the tradition still existed that in a very remote past certain human organs changed from a plant to an animal character.

All these changes of the human body are only the expression of the forces of transformation which lie in the ether body, the astral body, and the "I." The transformations of the physical human body accompany the acts of the higher parts of man. One can therefore understand the structure and the activity of this human body only if one absorbs oneself in the "Akasha Chronicle," which shows how the higher changes of the more spiritual and mental parts of man take place. Everything physical and material finds its explanation through the spiritual. Light is shed even on the *future* of the physical if one studies the spiritual.

8. The Occult Significance of the Blood: An Esoteric Study (CW 55), Lec. in Berlin 10.25.1906

Take man — without considering his blood — take him as being made up of the substance of the surrounding physical world, and containing, like the plant, certain juices which transform it into living substance, and in which a nervous system gradually becomes organized. This first nervous system is the so-called sympathetic system, and in the case of man it extends along the entire length of the spine, to which it is attached by small threads on either side. It has also at each side a series of nodes, from which threads branch off to different parts, such as the lungs, the digestive organs, and so on. This sympathetic nervous system gives rise, in the first place, to the life of sensation just described. But man's consciousness does not extend deep enough to enable him to follow the cosmic processes mirrored by these nerves. They are a medium of expression, and just as human life is formed from the surrounding cosmic world, so is this cosmic world reflected again in the sympathetic nervous system. These nerves live a dim inward life, and if man were but able to dip down into his "sympathetic" system, and to lull his higher nervous system to sleep, he would behold, as in a state of luminous life, the silent workings of the mighty cosmic laws.

In past times people were possessed of a clairvoyant faculty which is now superseded, but which may be experienced when, by special processes, the activity of the higher system of nerves is suspended, thus setting free the lower or subliminal consciousness. At such times man lives in that system of nerves which, in its own particular way, is a reflection of the surrounding world.

Certain lower animals indeed still retain this state of consciousness, and, dim and indistinct though it is, yet it is essentially more far-reaching than the consciousness of the man of the present day. A widely extending world is reflected as a dim inward life, not merely a small section such as is perceived by contemporary man. But in the case of man something else has taken place in addition. When evolution has proceeded so far that the sympathetic nervous system has been developed, so that the cosmos has been reflected in it, the evolving being again at this point opens itself outwards; to the sympathetic system is added the spinal cord. The system of brain and spinal cord then leads to those organs through which connection is set up with the outer world.

Man, having progressed thus far, is no longer called upon to act merely as a mirror for reflecting the primordial laws of cosmic evolution, but a relation is set up between the reflection itself and the external world. The junction of the sympathetic system and the higher nervous system is expressive of the change which has taken place beforehand in the astral body. The latter no longer merely lives the cosmic life in a state of dull consciousness, but it adds thereto its own special inward existence. The sympathetic system enables a being to sense what is taking place outside it; the higher system of nerves enables it to perceive that which happens within, and the highest form of the nervous system, such as is possessed by mankind in general at the present stage of evolution, takes from the more highly developed astral body material for the creation of pictures, or representations, of the outer world. Man has lost the power of perceiving the former dim primitive pictures of the external world, but, on the other hand, he is now conscious of his inner life, and out of this inner life he forms, at a higher stage, a new world of images in which, it is true, only a small portion of the outer world is reflected, but in a clearer and more perfect manner than before.

Hand in hand with this transformation another change takes place in higher stages of development. The transformation thus begun extends from the astral body to the etheric body. As the etheric body in the process of its transformation evolves the astral body, as to the sympathetic nervous system is added the system of the brain and spine, so, too, does that which — after receiving the lower circulation of fluids — has grown out of and become free from the etheric body now transmutes these lower fluids into what we know as blood.

Blood is, therefore, an expression of the individualized etheric body, just as the brain and spinal cord are the expression of the individualized astral body. And it is this individualizing which brings about that which lives as the ego or “I.”

Having followed man thus far in his evolution, we find that we have to do with a chain consisting of five links, affecting: —

- A. The Physical Body;
- B. The Etheric Body and
- C. The Astral Body.

These links are:

1. The inorganic, neutral, physical forces;
2. The vital fluids, which are also found in plants;
3. The lower or sympathetic nervous system;
4. The higher astral body, which has been evolved from the lower one, and which finds its expression in the spinal cord and the brain;
5. The Principle that individualizes the etheric body.

Just as these two latter principles have been individualized, so will the first principle through which lifeless matter enters the human body, serving to build it up, also become individualized; but in our present-day humanity we find only the first rudiments of this transformation.

We have seen how the external formless substances enter the human body, and how the etheric body turns these materials into living forms; how, further, the astral body fashions pictures of the external world, how this reflection of the external world resolves itself into inner experiences, and how this inner life then reproduces from within itself pictures of the outer world.

Now, when this metamorphosis extends to the etheric body, blood is formed. The blood vessels, together with the heart, are the expression of the transformed etheric body, in the same way in which the spinal cord and the brain express the transformed astral body. Just as by means of the brain the external world is experienced inwardly, so also by means of the blood this inner world is transformed into an outer expression in the body of man. I shall have to speak in similes in order to describe to you the complicated processes which have now to be taken into account.

The blood absorbs those pictures of the outside world which the brain has formed within, transforms them into living constructive forces, and with them builds up the present human body. Blood is therefore the material that builds up the human body. We have before us a process in which the blood extracts from its cosmic environment the highest substance it can possibly obtain, *viz.*, oxygen, which renews the blood and supplies it with fresh life. In this manner our blood is caused to open itself to the outer world.

We have thus followed the path from the exterior world to the interior one, and also back again from that inner world to the outer one. Two things are now possible. (1) We see that blood originates when man confronts the external world as an independent being, when out of the perceptions to which the external world has given rise, (2) he in his turn produces different shapes and pictures on his own account, thus himself becoming creative, and making it possible for the Ego, the individual Will, to come into life. A being in whom this process had not yet taken place would not be able to say "I." In the blood lies the principle for the development of the ego. The "I" can only be expressed when a being is able to form within itself the pictures which it has obtained from the outer world. An "I-being" must be capable of taking the external world into itself, and of inwardly reproducing it.

Were man merely endowed with a brain, he would only be able to reproduce pictures of the outer world within himself, and to experience them within himself; he would then only be able to say: "The outer world is reflected in me as in a mirror." If, however, he is able to build up a new form for this reflection of the external world, this form is no longer merely the external world reflected, it is "I." A creature possessed of a spinal cord and a brain perceives the reflection as its inner life. But when a creature possesses blood, it experiences its inner life as its own form. By means of the blood, assisted by the oxygen of the external world, the individual body is formed according to the pictures of the inner life. This formation is expressed as the perception of the "I."

The ego turns in two directions, and the blood expresses this fact externally. The vision of the ego is directed inwards; its will is turned outwards. The forces of the blood are directed inwards; they build up the inner man, and again they are turned outwards to the oxygen of the external world. This is why, on going to sleep, man sinks into unconsciousness; he sinks into that which his consciousness can experience in the blood. When, however, he again opens his eyes to the outer world, his blood adds to its constructive forces the pictures produced by the brain and the senses. Thus the blood stands midway, as it were, between the inner world of pictures and the exterior living world of form. This role becomes clear to us when we study two phenomena, *viz.*, ancestry — the relationship between conscious beings — and experience in the world of external events. Ancestry, or descent, places us where we stand in accordance with the law of blood relationship. A person is born of a connection, a race, a tribe, a line of ancestors, and what these ancestors have bequeathed to him is in his blood. In the blood is gathered together, as it were, all that the material past has constructed in man; and in the blood is also being formed all that is being prepared for the future.

When, therefore, man temporarily suppresses his higher consciousness, when he is in a hypnotic state, or one of somnambulism, or when he is atavistically clairvoyant, he descends to a far deeper consciousness, one wherein he becomes dreamily cognizant of the great cosmic laws, but nevertheless perceives them much more clearly than the most vivid dreams of ordinary sleep. At such times the activity of his brain is in abeyance and during states of the deepest somnambulism this applies also to the spinal cord. The man experiences the activities of his sympathetic nervous system; that is to say, in a dim and hazy fashion he senses the life of the entire cosmos. At such times the blood no longer expresses pictures of the inner life which are produced by means of the brain, but it presents those which the outer world has formed in it. Now, however, we must bear in mind that the forces of his ancestors have helped to make him what he is. Just as he inherits the shape of his nose from an ancestor, so does he inherit the form of his whole body. At such times of suppressed consciousness he senses the pictures of the outer world; that is to say, his forebears are active in his blood, and at such a time he dimly takes part in their remote life.

Everything in the world is in a state of evolution, human consciousness included. Man has not always had the consciousness he now possesses; when we go back to the times of our earliest ancestors, we find a consciousness of a very different kind. At the present time man in his waking-life perceives external things through the agency of his senses and forms ideas about them. These ideas about the external world work in his blood. Everything, therefore, of which he has been the recipient as the result of sense-experience, lives and is active in his blood; his memory is stored with these experiences of his

senses. Yet, on the other hand, the man of today is no longer conscious of what he possesses in his inward bodily life by inheritance from his ancestors. He knows naught concerning the forms of his inner organs; but in earlier times this was otherwise. There then lived within the blood not only what the senses had received from the external world, but also that which is contained within the bodily form; and as that bodily form was inherited from his ancestors, man sensed their life within himself.

If we think of a heightened form of this consciousness, we shall have some idea of how this was also expressed in a corresponding form of memory. A person experiencing no more than what he perceives by his senses, remembers no more than the events connected with those outward sense-experiences. He can only be aware of such things as he may have experienced in this way since his childhood. But with prehistoric man the case was different. Such a man sensed what was within him, and as this inner experience was the result of heredity, he passed through the experiences of his ancestors by means of his inner faculty. He remembered not only his own childhood, but also the experiences of his ancestors. This life of his ancestors was, in fact, ever present in the pictures which his blood received, for, incredible as it may seem to the materialistic ideas of the present day, there was at one time a form of consciousness by means of which men considered not only their own sense-perceptions as their own experiences, but also the experiences of their forefathers. In those times, when they said, "I have experienced such and such a thing," they alluded not only to what had happened to themselves personally, but also to the experiences of their ancestors, for they could remember these.

This earlier consciousness was, it is true, of a very dim kind, very hazy as compared to man's waking consciousness at the present day. It partook more of the nature of a vivid dream, but, on the other hand, it embraced far more than does our present consciousness. The son felt himself connected with his father and his grandfather as one "I," because he felt their experiences as if they were his own. And because man was possessed of this consciousness, because he lived not only in his own personal world, but because within him there dwelt also the consciousness of preceding generations, in naming himself he included in that name all belonging to his ancestral line. Father, son, grandson, etc., designated by one name that which was common to them all, that which passed through them all; in short, a person felt himself to be merely a member of an entire line of descendants. This sensation was a true and actual one.

We must now inquire how it was that his form of consciousness was changed. It came about through a cause well known to occult history. If you go back into the past, you will find that there is one particular moment which stands out in the history of each nation. It is the moment at which a people enters on a new phase of civilization, the moment when it ceases to have old traditions, when it ceases to possess its ancient wisdom, the wisdom which was handed down through generations by means of the blood. The nation possesses, nevertheless, a consciousness of it, and this is expressed in its legends.

In earlier times tribes held aloof from each other, and the individual members of families intermarried. You will find this to have been the case with all races and with all peoples; and it was an important moment for humanity when this principle was broken through, when foreign blood was introduced, and when marriage between relations was replaced by marriage with strangers, when endogamy gave place to exogamy. Endogamy preserves the blood of the generation; it permits of the same blood flowing in

the separate members as flows for generations through the entire tribe or the entire nation. Exogamy inoculates man with new blood, and this breaking-down of the tribal principle, this mixing of blood, which sooner or later takes place among all peoples, signifies the birth of the external understanding, the birth of the intellect.

The important thing to bear in mind here is that in olden times there was a hazy clairvoyance, from which the myths and legends originated. This clairvoyance could exist in the nearly related blood, just as our present-day consciousness comes about owing to the mingling of blood. The birth of logical thought, the birth of the intellect, was simultaneous with the advent of exogamy. Surprising, as this may seem, it is nevertheless true. It is a fact which will be substantiated more and more by external investigation; indeed, the initial steps along this line have already been taken.

But this mingling of blood which comes about through exogamy is also that which at the same time obliterates the clairvoyance of earlier days, in order that humanity may evolve to a higher stage of development; and just as the person who has passed through the stages of occult development regains this clairvoyance, and transmutes it into a new form, so has our waking consciousness of the present day been evolved out of that dim and hazy clairvoyance which [was] obtained in times of old.

At the present time everything in a man's environment is impressed upon his blood; hence the environment fashions the inner man in accordance with the outer world. In the case of primitive man it was that which was contained within the body that was more fully expressed in the blood. In those early times the recollection of ancestral experiences was inherited, and, along with this, good or evil tendencies. In the blood of the descendants were to be traced the effects of the ancestors' tendencies. Now, when the blood was mixed through exogamy, this close connection with ancestors was severed, and the man began to live his own personal life. Thus, in an unmixed blood is expressed the power of the ancestral life, and in a mixed blood the power of personal experience.

The myths and legends tell of these things. They say: "That which has power over thy blood, has power over thee." This traditional power ceased when it could no longer work upon the blood, because the latter's capacity for responding to such power was extinguished by the admixture of foreign blood. This statement holds good to the widest extent. Whatever power it is that wishes to obtain the mastery over a man, that power must work upon him in such a way that the working is expressed in his blood. If, therefore, an evil power would influence a man, it must be able to influence his blood. This is the deep and spiritual meaning of the quotation from Faust. This is why the representative of the evil principle says: "Sign thy name to the pact with thy blood. If once I have thy name written in thy blood, then I can hold thee by that which above all sways a man; then shall I have drawn thee over to myself." For whoever has mastery over the blood is master of the man himself, or of the man's ego.

When two groups of people come into contact, as is in the case of colonization, then those who are acquainted with the conditions of evolution are able to foretell whether or not an alien form of civilization can be assimilated by the others. Take, for example, a people that is the product of its environment, into whose blood this environment has built itself, and try to graft upon such a people a

new form of civilization. The thing is impossible. This is why certain aboriginal peoples had to go under, as soon as colonists came to their particular parts of the world.

It is from this point of view that the question will have to be considered, and the idea that changes are capable of being forced upon all and sundry will in time cease to be upheld, for it is useless to demand from blood more than it can endure.

Modern science has discovered that if the blood of one animal is mixed with that of another not akin to it, the blood of the one is fatal to that of the other. This has been known to occultism for ages. If you mingle the blood of human beings with that of the lower apes, the result is destructive to the species, since the one is too far removed from the other. If, again, you mingle the blood of man with that of the higher apes, death does not ensue. Just as this mingling of the blood of different species of animals brings about actual death when the types are too remote, so, too, the ancient clairvoyance of undeveloped man was killed when his blood was mixed with the blood of others who did not belong to the same stock. The entire intellectual life of today is the outcome of the mingling of blood, and the time is not far distant when people will study the influence this had upon human life, and they will be able to trace it back in the history of humanity when investigations are once more conducted from this standpoint.

We have seen that blood united to blood in the case of but remotely connected species of animals, kills; blood united to blood in the case of more closely allied species of animals does not kill. The physical organism of man survives when strange blood comes in contact with strange blood, [except, of course, in the case of incompatible blood types, which mutually coagulate one another] but clairvoyant power perishes under the influence of this mixing of blood, or exogamy.

Man is so constituted that when blood mingles with blood not too far removed in evolution, the intellect is born. By this means the original clairvoyance which belonged to the lower animal-man was destroyed, and a new form of consciousness took its place.

Thus in the higher stage of human development we find something similar to what happens at a lower stage in the animal kingdom. In the latter, strange blood kills strange blood. In the human kingdom strange blood kills that which is intimately bound up with kindred blood, *viz.*, the dim, dreary clairvoyance. Our everyday objective consciousness is therefore the outcome of a destructive process. In the course of evolution the kind of mental life due to endogamy has been destroyed, but in its stead exogamy has given birth to the intellect, to the wide-awake consciousness of the present day.

That which is able to live in man's blood is that which lives in his ego. Just as the physical body is the expression of the physical principle, as the etheric body is the expression of the vital fluids and their systems, and the astral body of the nervous system, so is the blood the expression of the "I," or ego. Physical principle, etheric body, and astral body are the "Above"; physical body, vital system, and nervous system are the "below." Similarly, the ego is the "above," and the blood is the "below." Whoever, therefore, would master a man, must first master that man's blood. This must be borne in mind if any advance is to be made in practical life. For example, the individuality of a people may be

destroyed if, when colonizing, you demand from its blood more than it can bear, for in the blood the ego is expressed. Beauty and truth possess a man only when they possess his blood.

Mephistopheles obtains possession of Faust's blood because he desires to rule his ego. Hence we may say that the sentence which has formed the theme of the present lecture was drawn from the profound depths of knowledge; for truly —

“Blood is a Very Special Fluid.”

9. The Human Spirit and The Animal Spirit (CW 60), Lec. in Berlin 11.17.1910

So in our study of human development, we have seen that between spirit and bodily organization the expression of the self-conscious ego intervenes, that the purified organization of the human being has immediate experience of the spirit, as it is seen in the imaginative creations of the artist; and that a self-conscious being lives in him which can oppose the ordering of the spirit in the body. Thus it is not a question of giving man preference over the animal or not; that would be the wrong way to approach the matter. We have, however, to realize that in the animal the spirit comes into direct contact with the bodily organization, and the soul passes its life in accordance with this bodily organization; whereas in man the living ego which is found in the soul pushes its way between spirit and bodily organization, establishing itself as mediator — thus working there between spirit and bodily organization. Through this the human ego has direct intercourse with what lives in the spiritual world. And it lives out this direct intercourse primarily by strenuous efforts to establish spiritual conditions in its environment which the animal is able to establish only instinctively. We see strongly marked a certain life of rights, a moral life among animals. But we understand the life of rights, the life of the State, and the whole course of world history, only when we see in man the emancipation of the spirit from the bodily nature by the intervention of the ego between spirit and bodily nature, through which the ego enters into immediate intercourse with the spiritual world.

The way in which this ego enters into direct intercourse with the spiritual world constitutes the normal condition of the human being. But as the intervention of a self-conscious ego between spiritual and bodily nature signifies progress beyond animal evolution, it is possible for man to go farther on this path by again developing within him the spirit which he set free from the bodily nature — developing it in the free intercourse experienced. The possibilities for this will be found in the lecture “The Nature of Sleep” [Not translated], and its full significance appears in Knowledge of the Higher Worlds. There we see how in normal human beings the emancipation of the spirit from the bodily nature has arrived at a certain stage, but can be carried further by developing slumbering germinating forces in man, through the unfolding of which he can advance to direct vision into the spiritual world.

We had first to lay a foundation for what we are able to cultivate as actual contemplation of the spiritual world, by seeking the real significance of the human being in this intervention of the ego between spirit and bodily nature. But this again is given us also in an external bodily way, since the self-

conscious ego as it confronts us in life does so in the inner being of man, entirely in his physiognomy and in accordance with his gestures. Some of you may remember that I have not only mentioned but have also substantiated that the old saying "Blood is a very special fluid" [A lecture called in English: "The Occult significance of Blood"] is founded on deep truth. This is really so, and in what is thus expressed simply as a direct working of the soul on the blood circulation, we can divine something of that working of the self-conscious ego into the bodily nature, into the organization. That is, so to say, the nearest gate for the ego, fertilized by the spirit, to enter the bodily nature and work upon it. We see this on observing how the soul works upon the blood circulation. In the phenomena of blushing and turning pale I have often given you common examples for the direct working of what goes on in the soul and expresses itself physically; for fear and shame are actual processes of the soul. Anyone wanting to deny this would have to be an unconscious materialist, like, for example, William James: for although he wishes to be spiritual he is actually a materialist in wishing to defend the assertion: "Man does not weep because he is sad, he is sad because he weeps." According to this we should have to imagine that man experiences sadness in his soul because some kind of material influence has an effect on the organism and squeezes out tears: and if man notices this — so says William James — he becomes sad. If we do not recognize how untenable this conclusion is, we shall not be able to understand that in affairs like laughing and weeping, and also in blushing, where a rush of blood takes place from the centre to the periphery, we have to do with material processes directly under the influence of soul and spirit.

If we think this over we shall be able to admit that in man what belongs to the soul does in very truth express itself in the circulation of the blood. What we say here about man; namely, that in the blood, and in the circulation, the self-conscious ego has its life, we cannot directly apply to the animal, because in it a self-conscious ego cannot work into the blood circulation, and — what is essential — because the animal does not open itself directly to the influence of the spiritual world which works into it; rather, from necessity. Whereas in the animal's blood circulation we have before us something in which the soul life of the animal finds immediate expression, in the blood circulation of the human being something is to be seen of the way in which the spirit works on the ego. If some day people will begin to give a little thought to what is here in question; namely, the importance for human life that man should not be organized from the outset to receive a definite imprint, of balance, of individual movement and of the sense of life, but must himself struggle to attain them — when they can discover how true it is that in spatial directions we have to do with realities, whether a spine is in a horizontal or vertical relation to space, or whether the blood circulates in this or that direction — then they will see how essential is the way in which such organizations are inserted into the whole cosmic connection. We should be obliged to see in reality, for example, in the spatial direction of a certain line, something of essential importance. When this is understood we may judge how great is the significance of the position and all the processes in the blood, in the human blood system. Today it is believed that the theory of the blood circulation is complete in itself. It is not so at all. We are only beginning to learn something of the secrets of the blood circulation. And not dogmatically to make bare assertions I will point to the following.

Not more than twenty-five years ago, a scientific investigator in this sphere, the criminologist Moritz Benedict, celebrated for his mathematical qualifications in this direction, was first to draw attention to the important fact — generally ignored today — that the corresponding beats in the right artery and the

left are different — an important fact for knowledge of the connections in the human being. And of special importance is something found in this sphere, not by anyone famous but by a very simple man, a Dr. Karl Schmidt. It was published by him in 1892 in the Vienna Medical Weekly in his article “Heartbeat and Pulsation,” in which quite important observations were indicated. Only when these things, still in their infancy, are studied to some degree, will a beginning have been made in knowledge of the connection between the self-conscious ego and the blood circulation, on the one hand, and, on the other hand, the connection between the animal spirit working in the animal and the animal blood circulation. Last time, I pointed out that we, indeed, are able to go into details in the sciences of the organs and their individual functions, and are able to give evidence of the different ways the spirit shows itself in man and in animal. In this connection it is quite comprehensible that modern investigations into the relation of man's blood to that of apes say little, because they go only into externals — the purely physical substance, the chemical reactions, and so forth — not into the real question. Were it only a matter of physical substance it would necessarily be quite immaterial whether a wheel was used as a child's toy or for a watch. But it always depends on how a member or an organ is used in the whole of a being or of a thing. It has nothing to do with how man's blood is related to the blood of the ape, or the like, but with how the organs in question are placed in the service of the organization as a whole.

How the actual truth is treated by external investigation is best shown in Goethe's dealings with natural science. In Goethe's days, where the things of Nature are concerned, a rigid materialism was already prevailing, and even the most eminent scientists who wished to maintain the difference between man and animal founded their claims on something purely material. They were of the opinion that this difference was to be seen in the fact that in the upper jawbone of the animal there is an intermediate bone not found in man. They said: What distinguishes man from the animal is that the animal possesses an intermaxillary bone to accommodate the upper incisors, and this bone is not found in man! For Goethe this was inadmissible. His concern was not to find the difference between man and animal in anatomical details, but in the way the spirit in man and the spirit in the animal made use of the organs. (Incidentally I will just refer you to Goethe's “Theory of Metamorphosis” in which may be found information about all the individual human organs.) Thus from the outset Goethe could never reconcile himself to the idea that man's superiority to the animal was to be sought in a material detail. Therefore his one wish was to prove that this assertion was incorrect, that this chasm did not exist; and he set himself to work to find this intermaxillary bone in man. If Goethe had never accomplished anything but this one deed, if he had discovered nothing further than the presence in man of the intermaxillary bone, though no longer in a developed state and not apparent, through this alone for human evolution he would still remain a mighty genius. Said Goethe to himself — and I do not relate this because he did it but because it came to light through his experience: With Herder, and with others who are at pains to understand man spiritually, I have directed attention primarily to how man rises above the animal because the animal is bound up with its organization; but man is emancipated from it and enters into immediate intercourse with the spirit, thus being able to work back upon his organs. Goethe says this, as I have indicated, but in the following words: “Animals are taught by their organs, said the men of old. I add to this: man, too, is taught by his organs; however, he has the advantage of in turn teaching them.” Goethe could not but admit that the organs are the same but formed from different sides. Hence his great joy when at last he found the intermaxillary bone in man. At this point he writes to Herder: “... I have found — neither gold nor silver but something that gives me infinite joy — the ‘os intermaxillary’ in

man! With Loder I compared man's skull with that of the animal and got on its track — when, lo! There it was. But I beg you to keep quiet about it, for this affair must be handled with caution. This should, however, make you too rejoice, for it is a kind of keystone to man; it is not lacking, it is there — actually there. I have imagined it in connection with your 'whole' — how splendidly it will fit in. ...” (Letter of 27th March, 1784.)

The difference between man and animal cannot be found in any particular detail. It has to be found entirely in the way the spirit makes use of things. For through this we behold man's relation to the spirit, how he has emancipated himself from what belongs to the body and is able to enter into direct intercourse with the spirit. Hence the difference in the sensation we experience on contemplating something spiritual from what we experience on contemplating anything physical and material. We seek to use words in quite different ways according to whether we look upon the spiritual or the physical.

Among Goethe's works two poems may be found together. Each contains three remarkable lines:

“In all things the eternal's moving past,
For everything must come to naught at last
If in being it still would stay.”

“Das Ewige regt sich fort in Allen:
Denn Alles muss in Nichts zerfallen,
Wenn es im Sein beharren will.”

Thus ends one poem, and the other begins:

“No being can come to naught at last!
In all the Eternal's moving past.
In being know thyself, then, blessed.”

“Kein Wesen kann zu Nichts zerfallen!
Das Ewige regt sich fort in Allen,
Am Sein erhalte dich beglückt!”

A complete contradiction! How may we explain it? And Goethe has put it so blatantly in two poems next to one another. In truth if we contemplate the spirit in material existence, in our heart we may call forth the feeling: If the spirit would continue in material being, if it were not to break up all form, it would have to crumble into nothingness. The moment we see the spirit in the bodily nature we have to say: We have here to do with the eternal, immortal being, with the spirit with which we can unite in man's emancipated soul. Then we may say:

“No being can come to naught at last,
In all the Eternal's moving past.
In being know thyself, then, blessed.”

if we bear in mind the immortal, the eternal, in a being.

If we see the soul, if we see the spirit in the bodily nature, we have to say: If it lived itself out entirely in the body, if it would hold fast to the body, then it would have to fall into nothingness.

Thus the study of the animal's spirit and the human spirit leads us gradually upwards to a premonition of what in reality may be called the spirit. But before it is wished to find the way in which knowledge about the spirit can be acquired, it is necessary to know the way in which the spirit shines forth in the human soul which it frees from the body in order within it to live a life independent of the bodily organization, a life in its own sphere.

10. An Occult Physiology (CW 128), Lec. 7, The Conscious Life of Man

The human being is thus protected inwardly on one side by a part of his organism in which these processes take their course much as they do outwardly in the macrocosm; and on the other side his protection is such that these processes are connected with his soul-processes, and are of a finer kind as has been explained. And so these physiological processes take place in our organism, salt-forming, liquefying, and warmth producing processes, which are the result of our conscious life; and others which take place outside our conscious life, in such a way that they furnish the basis for what prepares itself beforehand in the human organism in order that the processes adapted to the conscious life may take place. Our organism as a whole is thus a texture woven of those processes which we must describe as belonging in part to our conscious life and in part to the unconscious. It is an extraordinarily significant fact that our organism actually does represent a union formed out of two polaric extremes: that processes of coarser nature take place in such a way that they radiate into the organism, as it were, out of the macrocosm; and that, on the other hand, there are processes of a finer sort which arise out of our conscious life.

Now, since the organism is a single *whole* and all these parts interpenetrate and influence one another, the situation in this organism, as we have it to-day, is such that all these processes likewise play into one another and that we cannot so separate them one from another as to fix definite boundaries between them. One process plays into another. You need consider only the blood, the most vitally active and finest element. In this element you may perceive a stimulator of the salt-forming process, the process of condensation of a fluid, and the warming process. And likewise in all the systems of organs you may perceive how these processes take their course, and how they are stimulated. Let us therefore say, for example, that when we take nutritive substances from without into our digestive canal these nutritive substances have within themselves what I have called "external vital activity." They pass through what we may call the first stage of filtering by being taken in and digested by the stomach and what pertains to it; and they are then worked up in more special details by the inner cosmic system, and conveyed to where they can also nourish the finest instrument of the organism, the blood. Thus it is the inner cosmic system which undertakes this first filtering of the nutritive substances, which then have to be conveyed to all the other systems. At the same time, since we have recognised a *series of stages* in the organic systems of man, we may readily conceive that the most delicate system of all, the blood, must take into itself the most completely filtered vital activities of the nutriment, and that, when anything whatever

enters into the blood, it contains by that time only the very least possible amount of that inner vital activity that was in the substances when they were taken in by the stomach. When the substances enter into the stomach they still contain a considerable part of their own nature and essential character, their own vital activity. But when once they are in the blood they must have surrendered all this, in so far as they are nutritive substances that have been conducted into the blood, and must have become something new. The blood is thus something which shields inwardly, in the highest degree, all its processes, something that carries on its processes in the greatest measure independently of the outer world. Such is the blood from the one point of view.

But we have already indicated that this blood is like a tablet which is equally exposed on its two sides, exposed, that is, to impressions coming from both directions. It is turned on the one side to the subconscious processes in the deeper regions of the human organism, where the nutritive substances, after going through filtering processes, come up and force their way to the blood. The influence of everything occurring there is diminished by the sympathetic nervous system, so that it does not reach our consciousness. And the *other* side of the tablet must be turned by the blood to the experiences of the conscious life of the soul. Not only the unconscious activities of the ego, which work up from the bony system, but also the conscious soul-activities, belonging to the other ego, must penetrate into the blood. They must be able to metamorphose themselves by the time they reach the blood, in order that they then may become the expression of what we have about us in our environment as physical-sensible world; for of course that which is woven into the plant world as ether-body, for example, is not visible to normal consciousness. It is the physical world, first of all, that we have around us; and, for the normal consciousness, we ourselves belong only to the physical world. Thus we expose this other side of our "blood-tablet" to the physical-sensible world which then becomes the content of our consciousness. The entire soul-life, as it is stimulated into thought through the impressions of the physical-sensible world and as it flames into feelings and is stirred into impulses of will, must find its instrument in the blood-system in so far as it is conscious ego-life.

And what does this signify? Nothing other than this: that not only are we able to have in our blood that into which the nutritive substances have been changed, when they have been driven upward from the subconscious and filtered to the point where they may lead a life of their own in the blood, shielded from all macrocosmic laws; but also that there must be inscribed on the other side of the tablet of the blood all that occurs in the physical-sensible realm, in the lifeless matter of the physical-sensible world, which is known to us through sense-impressions and appears to our consciousness, at first, in the form of everything that can make impressions. For whatever goes to make up life can become known to the normal consciousness only through combinations of physical sense-impressions. In reality it becomes known only through the next higher super-sensible member, the ether-body. Thus the blood must be capable of being also related to the physical-sensible world just as this immediately surrounds us.

We may, accordingly, expect to find that something is incorporated into the blood which, we might say, does not manifest itself there as if it were due to the influence of processes working up from the lower depths of our nature, but rather as if it were due to the influence of external macrocosmic laws and vital activities. We must have in our blood, therefore, something that is similar in character and action to direct external processes, which take their course outside of us in the same way in which they gradually

come later to take their course within our organism. That is, there must be physical, chemical, inorganic processes which take their course within our blood, which are necessary to enable our ego to take part in the physical world. Thus we shall have to seek in the blood for processes wherein substances can act through their physical-sensible character, in accordance with what they are in the macrocosm. And this we do find, as a matter of fact, in that something is presented to us in the red corpuscles which shows us that it is just *beginning to live*, and is at the point where it passes over to the state of lifelessness. And from the other side of the tablet something is incorporated into the blood which we may call a process easily comparable to an external process of combustion. In short we have in the blood, disposed on the other side, and recognisable even physically, everything that makes man a physical-sensible being through the fact that in the blood he has an instrument for his ego which is living in this physical-sensible world.

Thus, even concerning the organisation of the blood, physical chemical research itself can show us how significant, how illuminating, occult premisses may be for what is presented to direct inquiry into the physiology of man.

From all the foregoing we may say that we have in the human organism, in the first place, processes which are stimulated by the blood-process in so far as this is related to the outside world, and which constitute physical-sensible processes of the outside world; but that we have also other processes which reach as far as the blood-system from the other direction, and are fitted into this system after they have been filtered to the last degree. Only when we clearly perceive this will the blood appear to us the truly important organ it is. We shall see that it has on the one hand turned its entire being, so to speak, toward life in the very lowest and most basic forms that we know round about us, so that it almost becomes a material substance which tends continually to evoke physical chemical processes in order to be able to serve as an instrument for the ego; and on the other hand that it is the most completely shielded of substances, which carries on inner processes that could not be carried on anywhere else, because everything which is pre-requisite to those processes is dependent upon all the other processes that fit themselves into the processes of the blood. In other words the *finest* and *highest* processes which are stimulated out of the depths of our organism unite, within the circuit of our blood, with the other, the physical chemical processes, which obey the laws of the external world. In no other substance does the physical-sensible world come into such direct contact, as does the blood, with something of an entirely different character which, for its very existence, presupposes the activity of super-sensible systems of force. In fact, this blood is something in which the lowliest that man can see in processes around him is blended with the loftiest that can take on organic form within his nature.

It will be entirely clear to us, therefore, that in these blood-processes we have before us something which, if it becomes irregular, unrhythmical, must cause irregularities in the greatest measure in our entire organism. And since the blood is the expression of the whole collection of organic processes we shall have to consider carefully, in connection with irregularities of the blood, where abnormal phenomena are manifest, difficult to distinguish individually, to which particular course of processes we must attribute these irregularities. If, for instance, they are to be found in those processes in the blood-channels which follow the pattern of physical chemical processes in the outer world, we shall then have to be quite clear that these irregularities, which we must learn to recognise and not confuse them, must

be dealt with from the side of consciousness, in so far as this consciousness is associated with the physical plane. And here a field is opened, a therapeutic field, which we may think of as one by way of which we shall learn to see whether certain irregularities in the circulation of the blood are connected with such processes as we may call in the true sense of the term *physical chemical* processes. We shall then be able to intervene by means of such external impressions and appropriate control of external sense-impressions as we can evoke in dealing with a human being, in this case such external impressions as can produce physical chemical processes, that is, through everything which we can convey to the physical organism from without. By this we mean not so much the soul and spiritual impressions we can employ, though these are also included, as all those especially which we can effect through a control of the breathing process, through watching over the breathing process and also over the reciprocal action of the human organism and the external world through the skin.

Then again we can also see in the blood-organism the most delicate organic processes working from the other direction. And we shall have to understand, with reference to this blood-organism, that it represents the third stage in the refinement of our nutritive substances. If the blood-organism, because it evokes those delicate processes of salt forming, liquefaction and warmth under the influence of external impressions, is thereby predetermined from without in its physical chemical course by the soul-processes themselves, we may ask how this process as a blood-process is determined from within. We must distinguish the function belonging to the blood by reason of the fact that it is blood; but we must also understand that it needs to be nourished just like any other organ: we must consider it in the same way as any other organ that needs to be nourished. And on the other hand we must also recognise it as the organ standing at the highest stage of organic activity. With regard to this activity we must consider especially what we call the inner support of human life. The blood, which is the opposite extreme, so to speak, from the bony system, must be most of all protected in order that in our thinking it may create, as the instrument of thought in so far as this thought has ego-consciousness — that it may be able to create the process we have called salification. This protection must proceed from the blood itself; therefore the blood must above everything be capable of calling forth, spiritually as it were, a spiritual bony system, must be able itself to cause the process of salt-forming. This is a task to which the blood must so devote itself that it can be independent of the other organs, and need only receive from the other organs the least possible support for its own work. Least of all do the vital activities of the other organs play into this salifying process of the blood, so that in respect to this process of salification, in relation to thought, the blood is what most of all makes the organism an inner one.

And how can we fail to recognise this, since our thought is the most inward thing we have, that in which we most completely interiorise ourselves to our normal consciousness? Whereas in our feelings we are, to our normal consciousness, at the border-line between the inner and the outer, and in our will-impulses we come into such strong contact with the outer world that under ordinary circumstances the human being no longer recognises himself in his will-impulses! Man recognises himself always in his thoughts, but not in his impulses of will. This may be seen from the fact that there has been so much controversy in the world over the question of the freedom or absence of freedom of the human will, as well as over its other qualities. In our thought-system, which has its physical correlative in a process of salification, we have the innermost aspect of what the blood has to accomplish as an instrument of the ego. And since the process of salification must be completely interiorised and protected against the

other organs, this capacity of the blood may be most of all hindered by abnormalities within it. When we note that the blood is so hindered that it no longer manifests its capacity in this direction, we must understand that it needs to be stimulated to that sort of activity which has fallen below a certain borderline in its own particular life.